

## SAFETY PRECAUTIONS

### SERVICE WARNING

Only qualified service technicians who are familiar with safety checks and guidelines should perform service work. Before replacing parts, disconnect power source to protect electrostatically sensitive parts. Do not attempt to modify any circuit unless so recommended by the manufacturer. When servicing the receiver, use an isolation transformer between the line cord and power receptacle.

### SERVICING THE HIGH VOLTAGE AND CRT

Use **EXTREME CAUTION** when servicing the high voltage circuits. To discharge static high voltage, connect a 10K ohms resistor in series with a test lead between the receiver and CRT anode lead. **DO NOT** lift the CRT by the neck. Always wear shatterproof goggles when handling the CRT to protect eyes in case of implosion.

### X-RAY RADIATION AND HIGH VOLTAGE LIMITS

Be aware of the instructions and procedures covering X-ray radiation. In solid-state receivers and monitors, the CRT is the only potential source of X-rays. Keep an accurate high voltage meter available at all times. Check meter calibration periodically. Whenever servicing a receiver, check the high voltage at various brightness levels to be sure it is regulating properly. Keep high voltage at rated value, **NO HIGHER**. Excessive high voltage may cause X-ray radiation or failure of associated components. **DO NOT** depend on protection circuits to keep voltage at rated value. When troubleshooting a receiver with excessive high voltage, avoid close contact with the CRT. **DO NOT** operate the receiver longer than necessary. To locate the cause of excessive high voltage, use a variable AC transformer to regulate voltage. In present receivers, many electrical and mechanical components have safety related characteristics which are not detectable by visual inspection. Such components are identified by a # on both the schematic and the parts list. For **SAFETY**, use only equivalent replacement parts when replacing these components.

### SAFETY CHECKS – FIRE AND SHOCK HAZARD

#### Cold Leakage Checks for Receivers with Isolated Ground

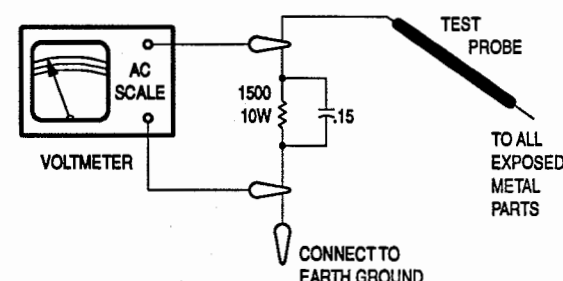
Unplug the AC cord, connect a jumper across the plug prongs, and turn the power switch on (if applicable). Use an ohmmeter to measure the resistance between the jumped AC plug and any exposed metal cabinet parts such as antenna screw heads, control shafts, or handle brackets. Exposed metal parts with a return path should measure between 1M ohms and 5.2M ohms. Parts without a return path must measure infinity.

#### Hot Leakage Current Check

Plug the AC cord directly into an AC outlet. **DO NOT** use an isolation transformer. Use a 1500 ohms, 10W resistor in parallel with a .15µF capacitor to connect between any exposed metal parts on the receiver and a good earth ground. (See figure below.) Use an AC voltmeter with at least 5000 ohms per volt sensitivity to measure the voltage across the resistor. Check all exposed metal parts and measure voltage at each point. Voltage measurements should not exceed .75VAC, 500µA. Any value exceeding this limit constitutes a potential shock hazard and must be corrected. If the AC plug is not polarized, reverse the AC plug and repeat exposed metal part voltage measurement at each point.

### GENERAL GUIDELINES

Perform a final **SAFETY CHECK** before returning receiver to customer. Check repaired area for poorly soldered connections, and check entire circuit board for solder splashes. Check inner board wiring for pinched wires or wires contacting any high wattage resistors. Check that all control knobs, shields, covers, grounds, and mounting hardware have been replaced. Be sure to replace all insulators and restore proper lead dress.



The listing of any available replacement part herein in no case constitutes a recommendation, warranty, or guarantee by Howard W. Sams & Company as to the quality and suitability of such replacement part. The numbers of the listed parts have been compiled from information furnished to Howard W. Sams & Company by the manufacturers of the specific type of replacement part listed.

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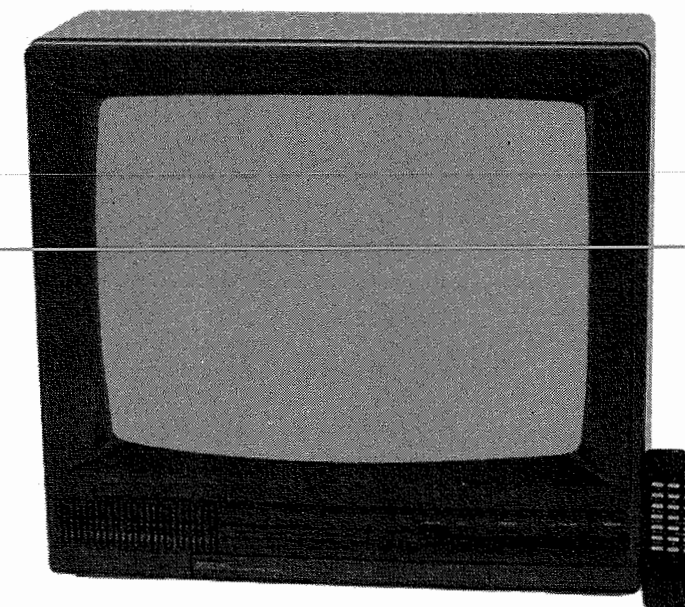
# PHOTOFACT® Technical Service Data

SET 3529

MODEL GCT1304M (CHASSIS NC-36A)

GOLDSTAR

## GOLDSTAR Model GCT1304M (Chassis NC-36A)



Representative Model  
Essential coverage  
for servicing a television receiver...

- Schematics
- Component locations
- Parts list

Coverage includes these additional models and chassis:

MODEL	CHASSIS
CN-14A80	NC-36A
CN-20A80	NC-36A
GCT1354M	NC-36A
GCT1904M	NC-36A

For Supplier Address,  
See PHOTOFACT Annual Index

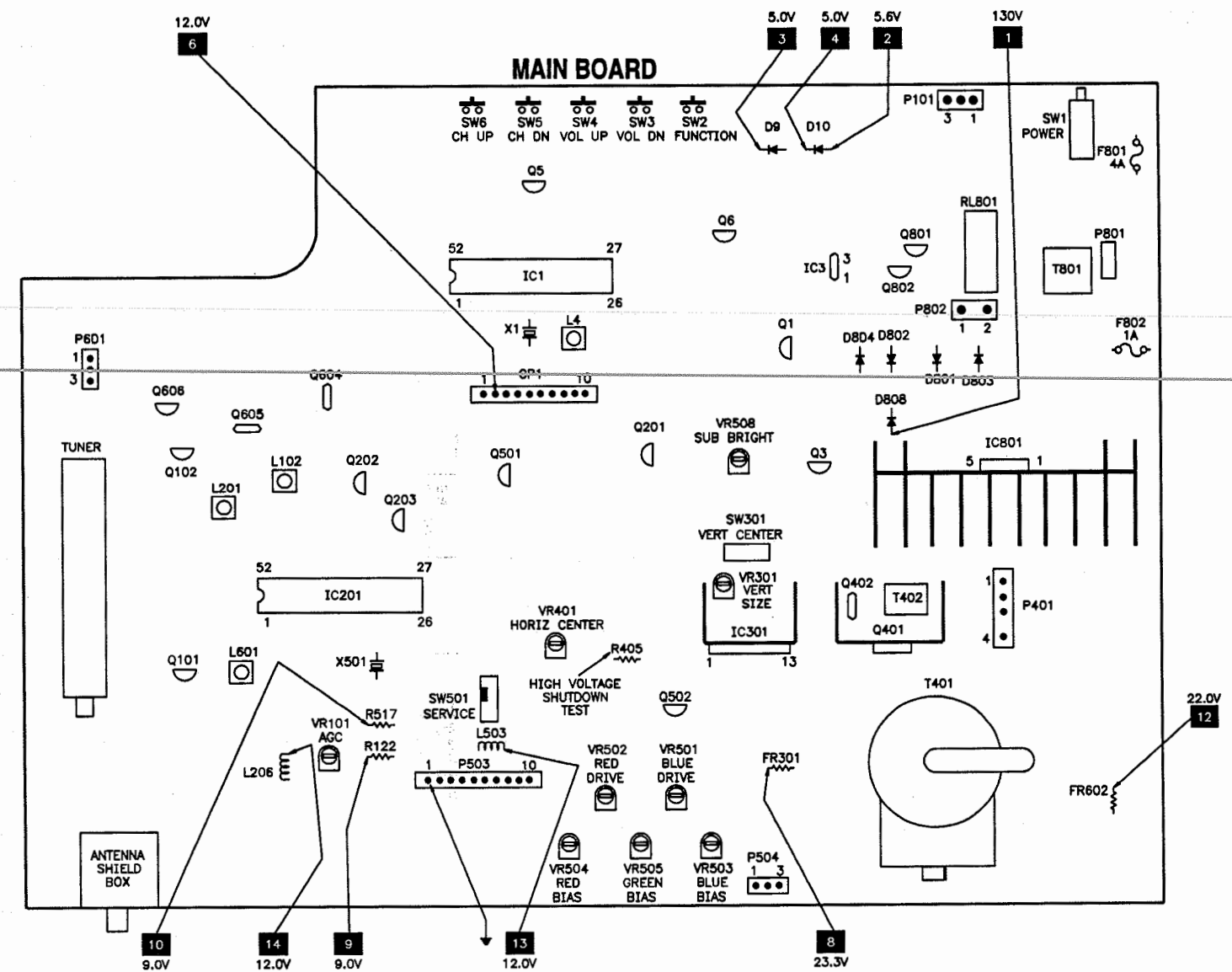
  
**HOWARD W. SAMS & COMPANY**

AUGUST 1995 SET 3529

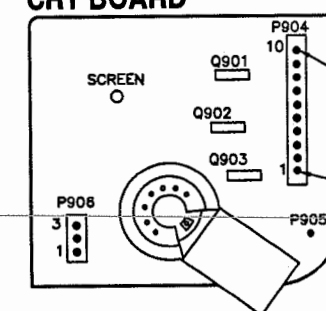
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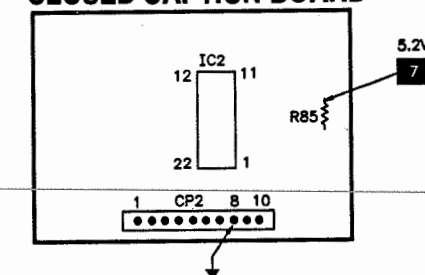
## PLACEMENT CHART



## CRT BOARD



**CLOSED CAPTION BOARD**



## HIGH VOLTAGE SHUTDOWN TEST

**Apply power and turn set on. Momentarily short across both ends of R405. The set should lose sound and raster. If set does not lose sound and raster, the shutdown circuit should be repaired. To restore operation, remove AC power for 30 seconds or more, then apply power and turn the set on.**

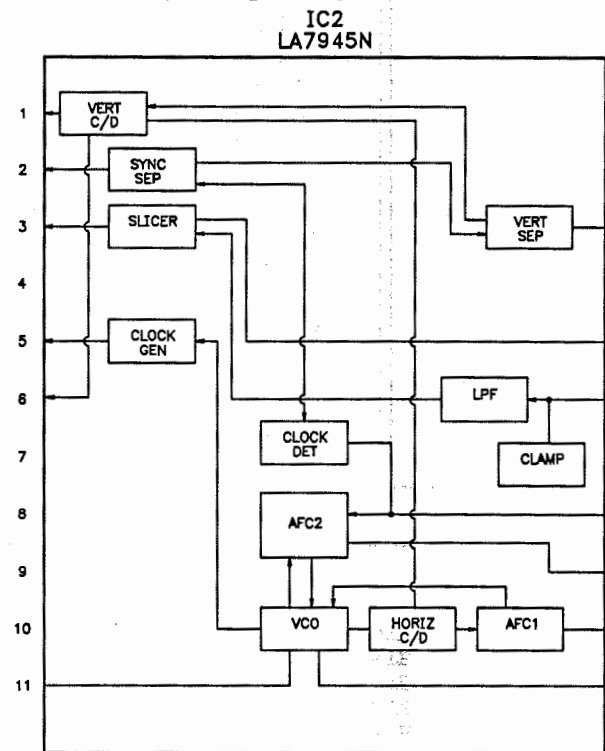
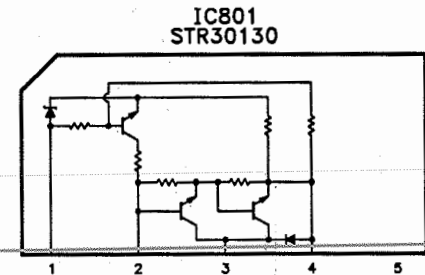
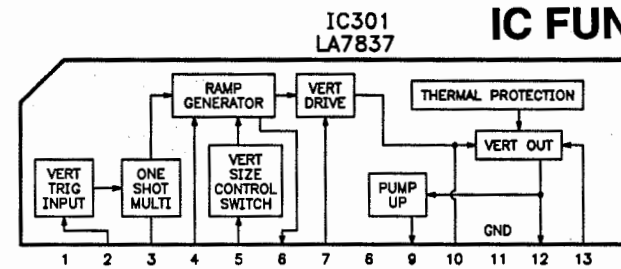
PARTS LIST continued

CONTROLS & RESISTORS			
Item No.	Function/Rating	Mfr. Part No.	NTE Part No.
# D812	Varistor SVC561D-14A	164-003D	-
# FR301	2 5% 1W Fusible	ORF0201J607	F1W2D0
# FR401	1.8 5% 2W Fusible	ORF0181K666	F2W1D8
# FR401 (1)	1.6 5% 2W Fusible	ORF0161K666	F2W1D6
# FR501	2 5% 1W Fusible	ORF0201J607	F1W2D0
# FR601 (2)	5.1 5% 1W Fusible	ORF0511J607	F1W5D1
# FR601	3 5% 1W Fusible	ORF0301J607	F1W3D0
# FR602 (2)	10 5% 1W Fusible	ORF0102J607	F1W010
# FR602	5.1 5% 1W Fusible	ORF0511J607	F1W5D1
# FR901	1 5% 1W Fusible	ORF0101J607	F1W1D0
# R82	15K 1% 1/6W	ORN1502F409	-
# R412	3300 5% 1/2W	ORD3301H609	HW233
# R413	.47 5% 1/2W	ORN0470H609	HW47
# R417	1000 5% 1/2W	ORD1001H609	HW210
# R418	200K 5% 1/2W	ORD2003H609	HW420
# R418 (1)	120K 5% 1/2W	ORD1203H609	HW412
# R419	10K 5% 1/2W	ORD1002H609	HW310
# R420	560 5% 1/2W	ORD5600H609	HW156
# R420 (1)	1000 5% 1/2W	ORD1001H609	HW210
# R421	220 5% 1/2W	ORD2200H609	HW122
# R422	33 5% 1/2W	ORD0332H609	HW033
# R423	1800 5% 1/2W	ORD1801H609	HW218
# R424	12K 5% 2W	ORD1202K607	2W312
# R801	220K 5% 1/2W	ORD2203H609	HW422
# R804, 05, 06	10K 5% 2W	ORS1002K607	2W310
# R804, 05, 06 (1)	12K 5% 2W	ORS1202K607	2W312
# R807	8200 5% 2W	ORS8201K607	2W282
# R809	22 5% 1/2W	ORS0222H609	HW022
# R810	5.6 5% 5W Wirewound	180-142K	-
# R811 (1)	180 5% 25W Wirewound	180-344Q	25W118
# R811	220 5% 25W Wirewound	180-344J	25W122
# R812	5600 5% 1/2W	ORS5601H609	HW256
# R813	5600 5% 1/2W	-	HW256
# R813 (1)	5100 5% 1/2W	ORS5101H609	HW251
# R814	470K 5% 1/2W	ORD4703H609	HW447
# R815	2.2 5% 7W Wirewound	180-344M	-
# R818	2.2M 10% 1/2W	180-783E	HW522
# TH901	7.0 Cold PTC	163-007A	-
VR101	10K AGC	180-451H	-
VR101 (1)	50K AGC	180-451K	-
VR301	22K Vertical Size	180-451J	-
VR401	200 Horizontal Centering	180-451A	-
VR501	300 Blue Drive	180-451B	-
VR502	300 Red Drive	180-451B	-
VR503	5000 Blue Bias	180-451G	-
VR504	5000 Red Bias	180-451G	-
VR505	5000 Green Bias	180-451G	-
VR508	10K Sub Brightness	180-451H	-

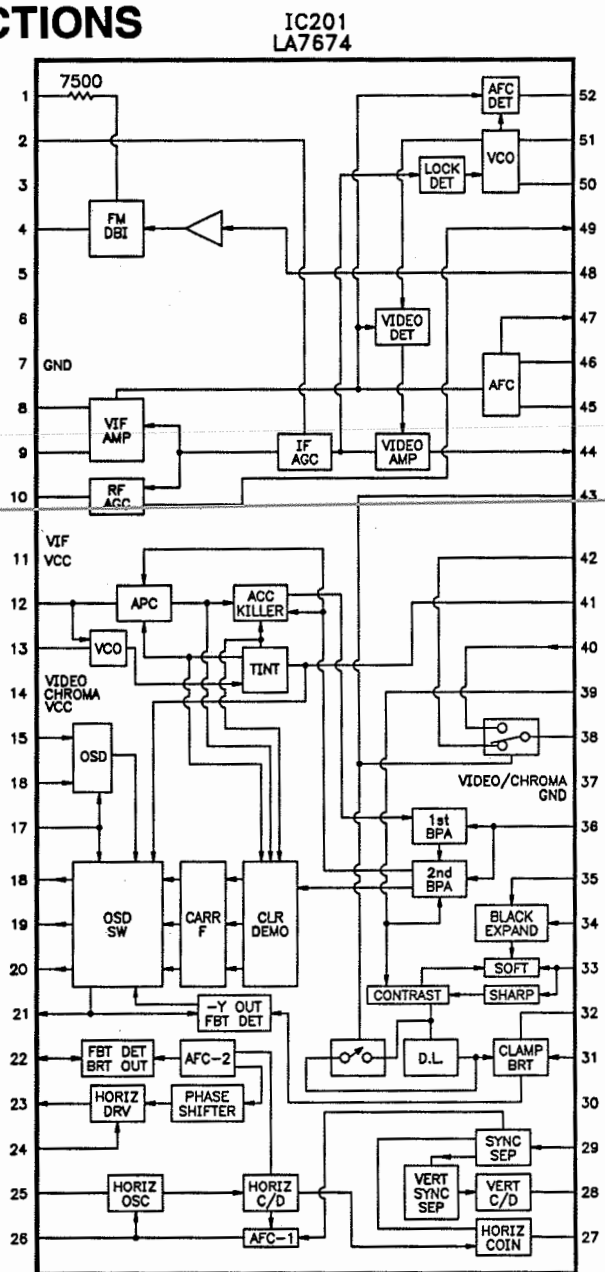
# For SAFETY use only equivalent replacement part.  
(1) Used in models CN-20A80 and GTC1904M only.  
(2) Used in models CN-20A80, GTC1304M, and GTC1904M only.

MISCELLANEOUS			
Item No.	Description	Mfr. Part No.	Notes
# F801	Fuse	131-033X	4Amp, 125V, Slow Blow
# F802	Fuse	OFF1001A512	1Amp, 125V, Fast Acting
# JA601 (3)	Jack	380-390A	Earphone
# P401	Connector	366-043F	Yoke
# P801	Line Cord	174-184N	AC, Polarized
# P801 (1)	Line Cord	174-199D	AC, Polarized
# RL801	Relay	141-018A	Power
SP1	Speaker	120-D04B	2" X 3 1/2", 16 Ohms, 1W
SP1 (1)	Speaker	120-C93A	2" X 3 1/2", 16 Ohms, 2.5W
SW1	Switch	140-275B	Power
SW2	Switch	140-333B	Function
SW3	Switch	140-333B	Volume Down
SW4	Switch	140-333B	Volume Up
SW5	Switch	140-333B	Channel Down
SW6	Switch	140-333B	Channel Up
SW301	Switch	140-111C	Vertical Centering
SW501	Switch	140-111C	Service
# V1	CRT	2055-V0744B	A34KPU02XX
# V1 (1)	CRT	2055-V6517A	A48ACB24X
X1	Crystal	166-235B	12MHz
X401	Crystal	166-015V	503kHz
X501	Crystal	156-001C	3.58MHz
Z101	Filter	166-268A	SAW
Z201	Trap	166-031K	4.5MHz
Z601	Filter	166-003D	4.5MHz
Adapter	Adapter	450-003A	Antenna, 75 / 300 Ohms
Antenna	Antenna	132-204H	Rod
Jack	Jack	380-362A	A/V Input (Model GCT1304M)
PC Board (2)	PC Board (2)	401-711A	Antenna
PC Board (1)(2)	PC Board (1)(2)	110-X42A	Closed Caption
PC Board (2)	PC Board (2)	313-249A	Control Panel (Model CN-20A80)
PC Board (2)	PC Board (2)	313-242A	Control Panel (Model CN-14A80)
PC Board (2)	PC Board (2)	313-250A	Control Panel (Model GCT1904M)
PC Board (2)	PC Board (2)	110-Y27A	CRT
PC Board (1)(2)	PC Board (1)(2)	110-T59B	CRT
PC Board (2)	PC Board (2)	310-G38A	Main (Model GCT1304M)
PC Board (2)	PC Board (2)	310-G38J	Main (Model CN-14A80)
PC Board (2)	PC Board (2)	310-G38F	Main (Model GCT1354M)
PC Board (2)	PC Board (2)	310-G23D	Main (Model GCT1904M)
PC Board (2)	PC Board (2)	310-G23F	Main (Model CN-20A80)
Preamp	Preamp	OIRH577700B	Remote Control
Shield Box	Shield Box	303-F61A	Antenna
Transmitter	Transmitter	105-095L	Remote
Tuner (2)	Tuner (2)	113-202J	UHF/VHF

# For SAFETY use only equivalent replacement part.  
(1) Used in models CN-20A80 and GTC1904M only.  
(2) Contact PTS Electronics Corporation for replacement; order by manufacturer's part number.  
(3) Used in models CN-14A80 and GCT1354M only.



IC FUNCTIONS



GOLDSTAR  
MODEL GCT1304M (CHASSIS NC-36A)

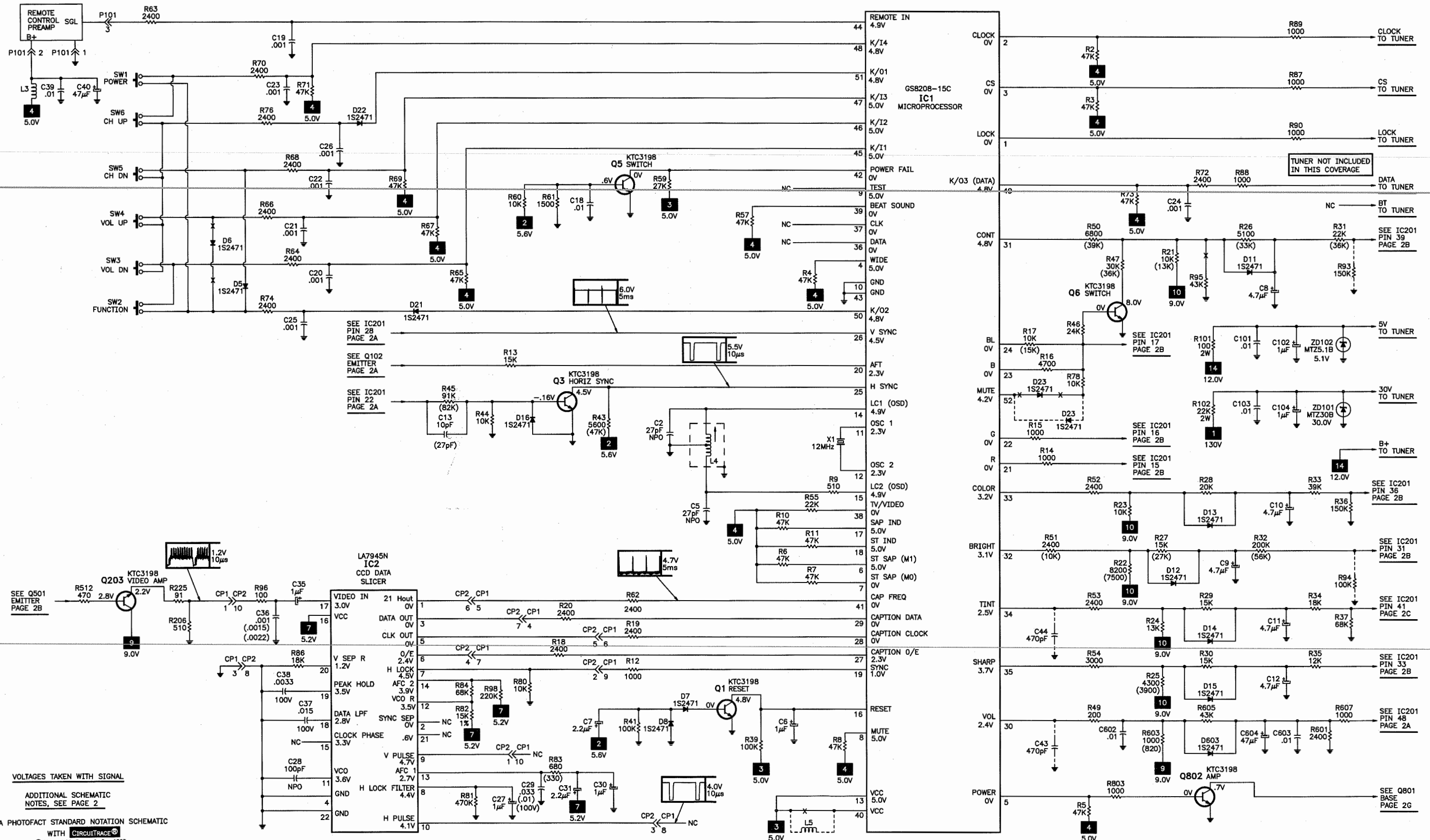
TEST EQUIPMENT

Test equipment listed by participating manufacturer illustrates typical or equivalent equipment used by Sams engineers to obtain measurements. This equipment is compatible with most types used by field service technicians.

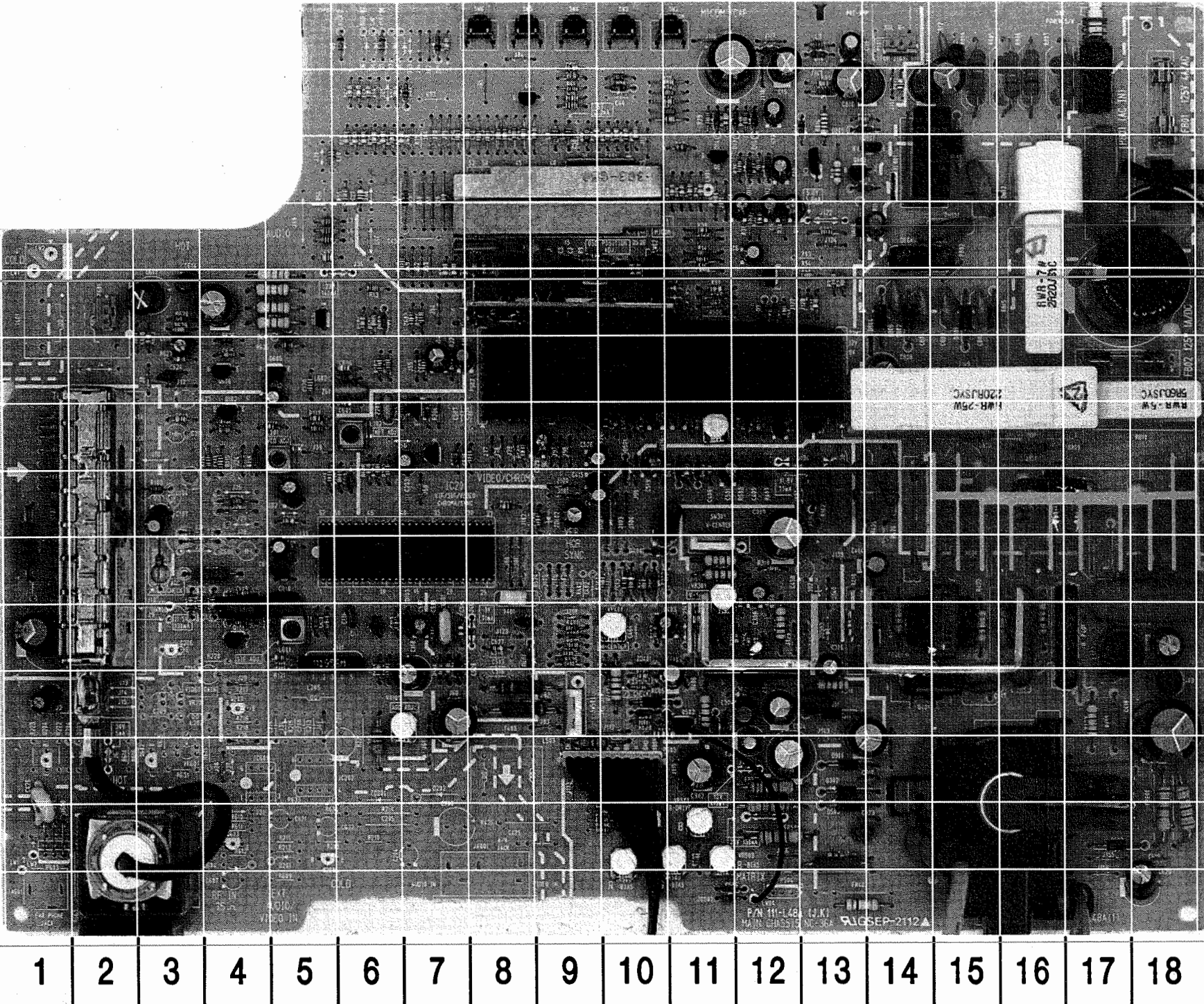
Equipment	Sencore No.	Equipment	Sencore No.
Oscilloscope	SC3100	Isolation Transformer	PR57
Generators		Capacitance Analyzer	LC101, LC102
RGB	CM2000	CRT Analyzer	CR70
Multiburst Signal	VG91	AC Leakage Tester	PR57
Color Bar	VG91	Inductance Analyzer	LC101, LC102
TV Stereo	VG91	Flyback Yoke Tester	TVA92
Digital VOM	SC3100	TV Stereo Power Monitor	SR68, PA81
Frequency Meter	SC3100	Field Strength Meter	SL750
Hi-Voltage Probe	HP200	Transistor Tester	TF46
Accessory Probes	TP212	Video Analyzer	VG91, TVA92



# SYSTEM CONTROL SCHEMATIC



MAIN BOARD



A HOWARD W. SAMS GRIDTRACE™ PHOTO

MAIN BOARD, GRIDTRACE LOCATION GUIDE

C1	E-9	C409	H-9	C902	L-11	L403	K-18	R46	C-11	R307	I-12	R622	E-5
C2	E-9	C410	K-11	CA01	C-10	L501	G-10	R47	C-11	R308	I-12	R623	E-5
C3	E-9	C411	J-14	CA02	D-8	L502	E-9	R48	C-13	R309	I-11	R624	E-5
C4	E-8	C412	J-14	D5	A-6	L503	L-9	R49	D-7	R310	I-12	R625	F-5
C5	E-10	C413	H-9	D7	E-12	L601	J-5	R50	C-10	R311	K-13	R626	F-4
C6	D-12	C414	I-14	D8	E-12	L602	F-6	R51	C-10	R312	J-12	R627	F-3
C7	F-12	C415	H-9	D9	A-12	P101	A-14	R52	C-10	R313	I-11	R628	E-3
C8	D-12	C416	J-16	D10	A-13	P401	J-17	R53	C-9	R401	J-9	R629	E-3
C9	D-12	C417	K-15	D11	C-12	P503	L-10	R54	C-9	R403	J-10	R801	F-18
C10	C-12	C418	K-18	D12	C-12	P601	E-2	R55	C-6	R404	K-10	R802	B-14
C11	D-12	C420	K-17	D13	B-12	P801	C-18	R59	B-9	R405	K-10	R803	D-13
C12	B-12	C421	I-18	D14	B-11	P802	D-14	R60	B-9	R406	K-11	R804	B-15
C13	L-10	C422	I-18	D15	B-12	Q1	E-12	R61	B-9	R407	H-12	R805	B-16
C15	B-12	C423	H-11	D16	I-10	Q3	G-13	R62	C-11	R408	H-13	R806	B-16
C16	B-11	C426	L-1	D20	B-10	Q5	B-8	R63	B-9	R409	H-14	R807	B-17
C17	B-9	C429	M-13	D21	A-7	Q6	C-11	R64	B-6	R410	I-14	R808	B-13
C18	B-9	C501	H-11	D22	B-7	Q101	J-4	R65	C-6	R411	J-14	R809	G-16
C19	B-8	C502	F-11	D23	C-7	Q102	G-4	R66	B-6	R412	J-14	R810	G-18
C20	B-8	C503	F-12	D301	K-13	Q201	F-11	R67	C-6	R413	K-17	R811	F-15
C21	B-8	C504	G-10	D302	L-13	Q202	G-7	R68	B-6	R414	H-8	R812	G-15
C22	B-8	C506	F-10	D303	K-11	Q203	G-7	R69	C-6	R415	H-11	R813	G-15
C23	B-8	C508	E-8	D401	J-8	Q401	K-15	R70	C-7	R416	H-10	R814	F-15
C24	B-8	C509	E-9	D402	H-11	Q402	J-14	R71	C-6	R417	K-10	R815	E-16
C25	B-8	C510	E-9	D403	H-11	Q501	G-9	R72	C-6	R418	N-13	R816	B-13
C26	C-7	C511	F-7	D404	I-10	Q502	K-11	R73	C-7	R419	M-13	R818	D-18
C27	C-6	C512	J-7	D405	K-10	Q604	E-5	R74	B-6	R420	J-16	RL801	C-14
C28	C-7	C513	J-7	D501	G-10	Q605	F-5	R76	A-7	R421	J-18	SW1	A-17
C29	E-8	C514	J-7	D502	H-10	Q606	F-4	R78	E-11	R422	J-15	SW2	A-10
C39	B-14	C515	K-7	D503	K-10	Q801	C-14	R87	G-1	R423	K-17	SW3	A-10
C40	A-13	C519	G-10	D504	G-12	Q802	C-13	R88	G-1	R424	H-14	SW4	A-9
C101	H-1	C520	L-9	D505	L-13	R2	E-7	R89	G-1	R426	K-10	SW5	A-8
C102	H-1	C521	M-9	D506	N-11	R3	E-7	R90	G-1	R501	G-12	SW6	A-8
C103	I-1	C522	L-10	D601	E-5	R4	E-7	R91	E-11	R502	H-12	SW301	I-11
C104	K-1	C523	M-14	D602	M-17	R5	D-8	R95	C-10	R503	G-11	SW501	K-9
C105	I-1	C524	L-12	D603	E-6	R6	D-8	R101	I-1	R504	F-11	T401	L-16
C106	J-1	C525	G-8	D801	E-15	R7	D-8	R102	H-13	R505	G-12	T402	J-15
C107	H-3	C526	G-9	D802	E-14	R9	D-9	R103	H-3	R508	G-10	T801	C-16
C108	J-3	C527	J-8	D803	E-15	R10	E-10	R104	I-4	R509	G-8	TH901	D-15
C109	I-4	C528	K-7	D804	E-14	R11	E-10	R105	J-3	R510	E-8	VR101	K-7
C110	H-6	C529	G-9	D805	B-14	R12	E-10	R106	J-4	R511	E-8	VR301	I-11
C111	H-5	C602	E-7	D806	D-13	R13	E-6	R107	J-4	R512	G-7	VR401	J-10
C112	F-5	C603	F-7	D807	C-15	R14	D-11	R108	I-4	R513	G-9	VR501	M-11
C113	G-4	C604	F-7	D808	G-14	R15	D-11	R109	I-3	R514	E-13	VR502	M-10
C114	H-5	C605	G-6	D809	B-13	R16	D-11	R110	G-5	R515	K-7	VR503	M-11
C115	J-5	C606	F-6	D810	B-13	R17	E-11	R111	G-5	R516	K-7	VR504	M-10
C116	J-6	C609	I-5	D811	C-14	R18	C-11	R112	G-5	R517	K-8	VR505	M-11
C117	J-6	C610	I-5	D901	L-13	R19	C-11	R113	G-4	R519	F-13	VR508	G-11
C118	K-7	C611	J-5	F801	B-18	R20	C-11	R114	G-4	R521	G-13	X1	D-9
C119	J-6	C612	I-5	F802	F-17	R21	B-11	R116	G-4	R525	J-9	X401	I-8
C120	F-5	C613	E-4	FR301	M-12	R22	B-11	R117	H-6	R526	J-9	X501	J-7
C201	G-9	C614	E-3	FR401	M-13	R23	B-11	R118	G-4	R527	J-9	Z101	J-5
C202	G-10	C615	F-4	FR501	M-12	R24	B-11	R119	J-6	R529	K-10	Z201	G-6
C203	G-7	C616	F-3	FR601	M-18	R25	B-11	R120	J-6	R530	K-10	Z601	F-6
C212	F-11	C617	E-3	FR602	M-18	R26	C-12	R121	K-5	R531	L-9	ZD101	I-1
C301	L-12	C618	F-3	FR901	L-12	R27	C-12	R122	K-8	R532	L-9	ZD102	H-1
C302	K-12	C619	M-18	IC1	C-9	R28	B-11	R201	G-10	R533	M-9	ZD103	J-7
C303	J-11	C620	N-18	IC3	C-13	R29	B-11	R202	F-11	R534	L-10	ZD301	K-11
C304	K-12	C624	F-3	IC201	I-6	R30	B-12	R203	H-6	R535	M-10	ZD401	J-10
C305	K-12	C632	D-5	IC301	K-12	R31	D-12	R205	G-7	R536	M-9	ZD501	K-7
C306	J-13	C801	C-17	IC801	H-16	R32	D-12	R206	E-7	R537	M-11	ZD507	N-11
C307	J-12	C803	E-15	L3	A-13	R33	E-13	R207	H-5	R601	D-7	ZD801	A-15
C308	I-12	C804	E-14	L4	E-9	R34	D-12	R208	H-6	R603	F-6		
C309	H-12	C805	E-15	L5	D-5	R35	E-13	R209	F-10	R605	E-6		
C310	L-14	C806	E-14	L10	C-5	R36	G-8	R224	F-10	R607	F-6		
C311	L-13	C807	E-18	L101	J-4	R37	E-13	R225	F-7	R608	G-6		
C312	K-13	C808	F-14	L102	G-6	R38	B-10	R301	K-11	R613	F-3		
C401	J-8	C809	B-15	L201	G-5	R39	D-11	R302	I-10	R617	J-5		
C403	J-11	C810	B-13	L203	G-7	R41	E-12	R303	I-10	R618	I-5		
C405	H-12	C811	D-14	L204	F-11	R43	F-12	R304	J-11	R619	G-3		
C406	G-12	C812	A-15	L206	L-6	R44	I-10	R305	J-12	R620	H-4		
C408	H-11	C814	B-14	L402	J-17	R45	I-10	R306	J-12	R621	E-5		

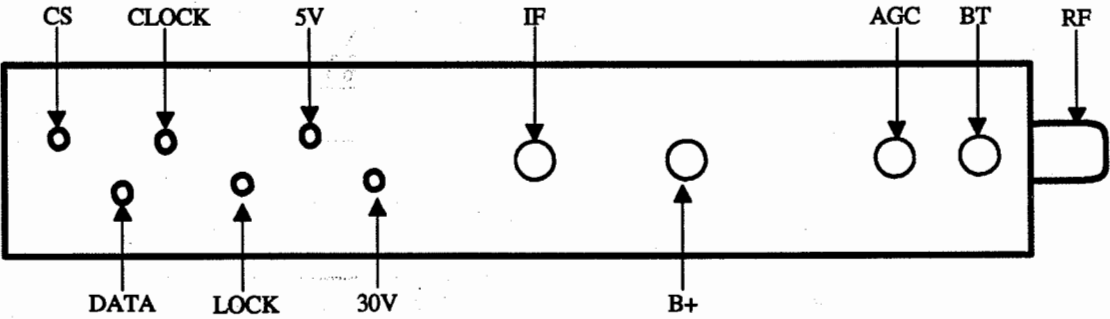
C  
TELEVISION SCHEMATIC continued

TUNER INFORMATION

TUNER VOLTAGE CHART			
Pin	VHF Low Band	VHF High Band	UHF Band
CS	0V	0V	0V
DATA	5.0V	5.0V	5.0V
CLOCK	0V	0V	0V
LOCK	0V	0V	0V
5V	5.2V	5.2V	5.2V
30V	29.0V	29.0V	29.0V
IF	0V	0V	0V
B+	12.0V	12.0V	12.0V
AGC	6.3V	6.4V	5.4V
BT	1.2V	4.2V	6.9V

NOTE: VHF Low Band voltages taken on channel 2.  
VHF High Band voltages taken on channel 7.  
UHF Band voltages taken on channel 14.

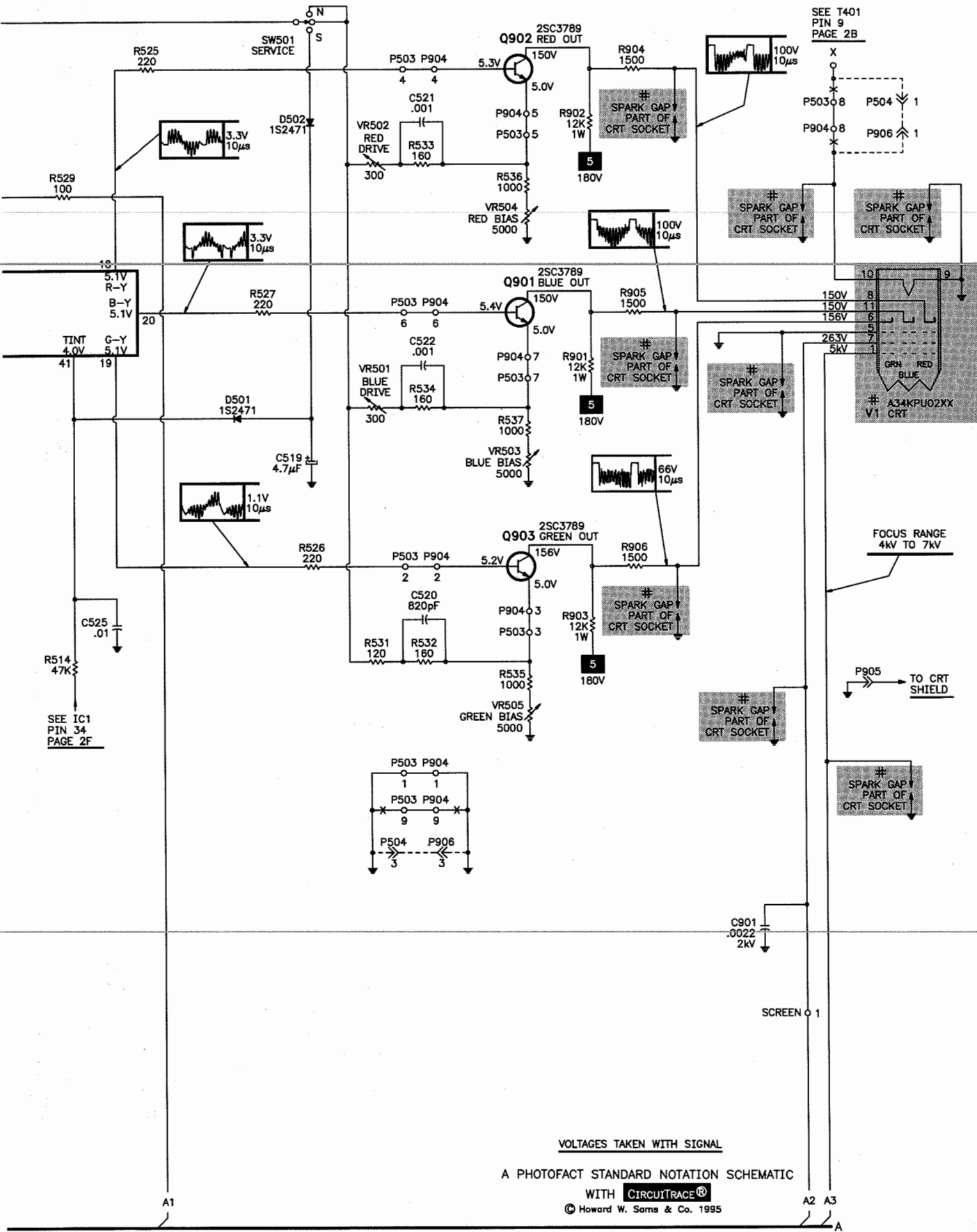
TUNER TERMINAL GUIDE



SCHEMATIC NOTES

- # For SAFETY use only equivalent replacement part, see parts list.
- ✕ Circuitry not used in some versions.
- Circuitry used in some versions.
- ⬇ Ground
- ⬆ Chassis ground
- ▽ Common tie point
- △ Taken from common tie point
- 3 Schematic CIRCUITRACE®: Voltage source tie point.
- A— Cabling: Heavy lines reduce use of multiple lines.

Waveforms and voltages are taken from ground, unless noted otherwise.  
Waveforms taken with triggered scope and colorbar signal.  
Waveform voltage is peak to peak. Timebase is per division. Waveforms shown at 10 divisions.  
Supply voltages maintained as seen at input.  
Voltages measured with digital meter and a 1000µV RF signal, with colorbar pattern, applied to antenna terminal.  
Controls adjusted for normal operation.  
Capacitors are 50 volts or less, 5% or greater unless noted.  
Electrolytic capacitors are 50 volts or less, 20% or greater unless noted.  
Resistors are 1/2W or less, 5% or greater unless noted.  
Value in ( ) used in some versions.  
Measurements with switching as shown, unless noted.  
Rated voltage shown on zener diodes.



VOLTAGES TAKEN WITH SIGNAL  
A PHOTOFACIT STANDARD NOTATION SCHEMATIC  
WITH CIRCUITRACE®  
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## PARTS LIST

## Important Parts Information

- The parts listed here are those not usually available from a well-stocked supply cabinet or bin.
- Where items may be replaced with equivalent parts, several alternates are shown from participating vendors.
- On the parts lists, safety items are marked with a # to remind you that only exact replacements are recommended for these items.
- When ordering parts, state the model number, part number, and description.

## Obtaining Parts

Many of these parts are available from your local Sams authorized distributor or the manufacturer of the equipment. Call Sams for the name of your nearest distributor:

800-428-7267

Or consult the Sams *Annual Index* for the address of the original equipment manufacturer.

## Participating Vendors

Information on test equipment and replacement parts is listed in these pages for the following participating vendors. Consult the Sams *Annual Index* for their current address.

- Custom Components Corporation (Chek-A-Color)
- NTE Electronics, Inc. (NTE)
- Philips ECG Company (ECG)
- PTS Electronics Corporation (PTS)
- Sencore, Inc.
- Thomson Consumer Electronics, Inc. (SK, TCE)

## SEMICONDUCTORS

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
D5 Thru D16, D20 Thru					
D23	1S2471	ODD247109AA	NTE519	ECG519	SK3100
D301	TVR06J	ODD060009AC	-	-	-
# D302	TVR06J	ODD060009AC	-	-	-
D303	1S2471	ODD247109AA	NTE519	ECG519	SK3100
D401 Thru					
D404	1S2471	ODD247109AA	NTE519	ECG519	SK3100
D405	TVR06J	ODD06009AC	-	-	-
D501 Thru					
D504	1S2471	ODD247109AA	NTE519	ECG519	SK3100
# D505	RGPI5J	ODD150009CA	NTE580	ECG580	SK5036
D506, D601	1S2471	ODD247109AA	NTE519	ECG519	SK3100
# D602	TVR06J	ODD060009AC	-	-	-
D603	1S2471	ODD247109AA	NTE519	ECG519	SK3100
# D801 Thru					
# D804	GP15J	ODD150009CE	NTE125	ECG125	SK3081
D805	1S2471	ODD247109AA	NTE519	ECG519	SK3100
D806	TVR06J	ODD060009AC	-	-	-
# D807	GP15J	ODD150009CE	NTE125	ECG125	SK3081
# D808	1S2471	ODD247109AA	NTE519	ECG519	SK3100
D809, 10, 11	1S2471	ODD247109AA	NTE519	ECG519	SK3100
# D901	TVR06J	ODD060009AC	-	-	-
IC1	GS8208-15C	OISA820815C	-	-	-
	LC864012B	OISA820815C	-	-	-
	LC86P4032	-	-	-	-
IC2	LA7945N	OISA794500B	-	-	-
	LA7945	OISA794500B	-	-	-
IC3	KIA78L05BP	-	-	ECG977	-
	KIA78L05AP	OIKE780050B	-	ECG977	-
IC201	LA7674	OISA767400A	-	-	-
IC301	LA7837	OISA783700A	-	-	-
	GL7837	OISA783700A	-	-	-
# IC801	STR30130	OIGL301300A	NTE1777	ECG1777	SK9870
Q1, 3, 5, 6	KTC3198Y	-	NTE85	ECG85	SK9229
	KTC3198-TP-Y	OTR319809AA	NTE85	ECG85	SK9229
	KTC1815	OTR319809AA	NTE85	ECG85	SK3124A
Q101	KTC3197-TP	OTR319709AB	NTE107	ECG107	SK3293
	KTC388A	OTR319709AB	NTE85	ECG85	SK3132
Q102, Q201	KTC3198Y	-	NTE85	ECG85	SK9229
	KTC3198-TP-Y	OTR319809AA	NTE85	ECG85	SK9229
	KTC1815	OTR319809AA	NTE85	ECG85	SK3124A
Q202	KTA1266Y	-	NTE290A	ECG290A	SK3114A
	KTA1266-TP-Y	OTR126609AA	NTE290A	ECG290A	SK3114A
	KTA1015	OTR126609AA	NTE290A	ECG290A	SK9132
Q203	KTC3198Y	-	NTE85	ECG85	SK9229
	KTC3198-TP-Y	OTR319809AA	NTE85	ECG85	SK9229
	KTC1815	OTR319809AA	NTE85	ECG85	SK3124A
# Q401	2SD1651-KR	OTR165100AA	NTE2331	ECG2331	SK9422
Q402	KTC2482	OTR248209AA	-	-	-
Q501	KTC3198Y	-	NTE85	ECG85	SK9229
	KTC3198-TP-Y	OTR319809AA	NTE85	ECG85	SK9229
	KTC1815	OTR319809AA	NTE85	ECG85	SK3124A
Q502	KTA1270Y	-	NTE290A	ECG290A	SK3114A
	KTA1270-TP-Y	OTR127009AA	NTE290A	ECG290A	SK3114A
	KTA562	OTR127009AA	NTE290A	ECG290A	SK3114A
Q604	KTC1027Y	-	-	-	-
	KTC2235Y	OTR223509AB	NTE382	ECG382	-
Q605	KTA1023Y	-	-	-	-
	KTA965-Y	OTR965000AA	-	-	-

# For SAFETY use only equivalent replacement part.

## SEMICONDUCTORS continued

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
Q606	KTC3198Y	-	NTE85	ECG85	SK9229
	KTC3198-TP-Y	OTR319809AA	NTE85	ECG85	SK9229
	KTC1815	OTR319809AA	NTE85	ECG85	SK3124A
Q801	KTC1627A-Y	OTR162709AB	NTE289A	ECG289A	SK3449
Q802	KTC3198Y	-	NTE85	ECG85	SK9229
	KTC3198-TP-Y	OTR319809AA	NTE85	ECG85	SK9229
	KTC1815	OTR319809AA	NTE85	ECG85	SK3124A
Q901, 02, 03	2SC3789E	OTR378900AB	NTE157	ECG157	SK3747
ZD1	MTZ5.1B	ODZ510009AB	NTE5010A	ECG5010A	SK5A1
ZD101	MTZ30B	ODZ300009BA	NTE5035A	ECG5035A	SK30A
ZD102	MTZ5.1B	ODZ510009AB	NTE5010A	ECG5010A	SK5A1
ZD103	MTZ9.1B	ODZ910009BA	NTE5018A	ECG5018A	SK9A1
ZD301	MTZ11B	ODZ110009AA	NTE5020A	ECG5020A	SK11A
ZD302, 03	MTZ30B	ODZ300009BA	NTE5035A	ECG5035A	SK30A
ZD401	MTZ11B	ODZ110009AA	NTE5020A	ECG5020A	SK11A
ZD501	MTZ9.1B	ODZ910009BA	NTE5018A	ECG5018A	SK9A1
ZD507	MTZ2.4B	-	-	-	-
ZD801	EQB01-12R1V	ODZ011209AC	-	-	-

## COILS &amp; TRANSFORMERS

Item No.	Function/Rating	Mfr. Part No.
# E6001	Yoke	851-036A
# E6001 (1)	Yoke	153-310A
L3	100μH	OLA1000K119
L4	OSD Position	150-489V
L5	-	-
L101	.29μH	150-167R
L102	AFT	150-540Y
L201	VCO	150-540T
L203	15μH	OLA0152K119
L204	39μH	OLA0392K119
L206	120μH	OLA1200K119
# L402 (1)	Horizontal Linearity	150-159A
# L402	Horizontal Linearity	150-159J
# L403	6800μH	150-1091
L501 (1)	27μH	OLA0272K119
L501	39μH	OLA0392K119
L502	15μH	OLA0152K119
L503	10μH	OLA0102K139
L601	SIF	150-540Z
L602	15μH	OLA0152K119
# L800	Degaussing	150-276F
# T401 (2)	Horizontal Output	154-177C
# T401 (1)(2)	Horizontal Output	154-064C
# T402	Horizontal Driver	151-386A
T601 (3)	Audio	151-169A
# T801	Line Filter	150-412A

- # For SAFETY use only equivalent replacement part.  
 (1) Used in models CN-20A80 and GTC1904M only.  
 (2) Focus and screen controls are part of T401.  
 (3) Used in models CN-14A80 and GCT1354M only.

## CAPACITORS &amp; ELECTROLYTICS

Item No.	Rating	Mfr. Part No.
C2	27pF 5% 50V NPO	OCX2700K409
C5	27pF 5% 50V NPO	OCX2700K409
C28	100pF 5% 50V NPO	OCC1010K415
C110	20pF 5% 50V NPO	OCC2000K415
C201	1μF 20% 50V NP	181-064R
C203	10μF 16V NP	181-064P
# C310	470pF 10% 500V	OCK4710W515
# C311	470pF 20% 35V	OCE4776J618
# C412	100pF 10% 500V	OCK1010W515
# C412 (1)	470pF 10% 500V	OCK4710W515
# C414	1μF 20% 250V	OCE105BR618
# C416	.0006 5% 1.6kV	181-141S
# C416 (1)	.0073 5% 1.6kV	181-131F
# C417	680pF 10% 2kV	181-087D
# C418	33μF 160V	181-102F
# C420	820pF 10% 500V	OCK8210W515
# C421	.47 5% 200V	181-128B
# C421 (1)	.27 5% 200V	181-059K
# C422	1μF 20% 250V	OCE1051R618
# C429	.022 10% 100V	OCQ2231N509
# C523	470pF 10% 500V	OCK4710W515
# C524	1000μF 20% 16V	OCE1086F618
# C619	470pF 10% 500V	OCK4710W515
# C620	100pF 20% 35V	OCE1076J618
# C801	.22 20% 125VAC	181-354K
# C803	.0022 10% 1kV	OCK22201510
# C804	.0022 10% 1kV	OCK22201510
# C805	.0022 10% 1kV	OCK22201510
# C806	.0022 10% 1kV	OCK22201510
# C807	470μF 200V	181-075E
# C808	4.7μF 160V	OCE475BP618
C901	.0022 10% 2kV	OCK22202510
# C902	4.7μF 20% 250V	OCE4751R618

# For SAFETY use only equivalent replacement part.  
 (1) Used in models CN-20A80 and GTC1904M only.

## CABINET PARTS

Item	Mfr. Part No.
<b>Model CN-14A80</b>	
Cabinet Front	300-A73G
Cabinet Rear	303-G63J
Control Button	441-307A
Power Button	441-315A

## Model CN-20A80

Cabinet Front	300-A86G
Cabinet Rear	303-G63L
Control Button	441-322A
Power Button	441-320A

## Model GCT1304M

Cabinet Front	300-B21C
Cabinet Rear	303-G63H
Control Button	441-358A
Power Button	441-314A

## Model GCT1354M

Cabinet Front	300-B21D
Cabinet Rear	303-G63H
Control Button	441-358B
Power Button	441-314C

## Model GCT1904M

Cabinet Front	300-A87D
Cabinet Rear	303-G85F
Control Button	441-321A
Power Button	441-319A
Spring, Power Button	320-062H



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